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THE BRYOLOGIST.

VOL. VI. JULY, 1903. No. 4.

LICHENS—STICTA.

BY CAROLYN W. HARRIS.

Sticta is largely a tropical genus, but we have in our own country a number of very interesting species; a few are found in the gulf states which are tropical. The name, meaning spotted, probably comes from the cyphellæ with which the underside of the thallus of most of the Stictas is covered, those in which cyphellæ are not present are beset with light-colored spots. As this is the only genus we have bearing cyphellæ it is readily distinguished by them from the other foliaceous lichens which it somewhat resembles. These cyphellæ are circular breaks in the lower cortical layer, and are analogous to the stomata or breathing pores of leaves.

The thallus of Sticta is usually wide lobed, elongated, medium in thickness and cartilaginous in texture; it lies flat upon the substratum and is usually loosely attached by rhizoids. The color is generally brown, light or dark, tinged with bluish green in some species. Sometimes the upper surface of the thallus presents a series of depressions, outlined by ridges. In the majority of species the upper surface is smooth or slightly wrinkled. The under part is always villous, the spongy nap varying in thickness, this with the cyphellæ or naked pale dots give the specimens a peculiar appearance. In several species the inner layer is a lemon or orange color which shows through the breaks in the cortical layer; these species are usually covered with soredia of the same color.

The apothecia are medium in size, varying in color from a bright to a dark chestnut, the disk is often convex, the margin thin and lighter in color. Stictas are found on shaded rocks, frequently growing with mosses, they also grow on the trunks of dead or living trees. Where conditions are favorable, some species attain a large size. A specimen of *Sticta amplissima* collected at Chilson Lake, Essex Co., N. Y., measured nearly a foot in diameter; it is now in the Museum of the New York Botanical Garden.

STICTA AMPLISSIMA (Scop.) Mass. Plate IX. Fig. 3. Thallus large, round, rather thin and brittle, when young it is smooth but grows somewhat wrinkled when fully developed. It is a light greenish gray when fresh, turning darker when pressed, often changing to brown. The lobes are elongated, somewhat appressed with wavy margins. The under surface is light brown, growing darker toward the centre; it is covered with a fine nap and scattered bunches of short rhizoids with which it is loosely attached to the substratum. The apothecia are very numerous, especially toward the centre, they are found in all stages of development on the same plant; when young they are sessile and cup-shape, becoming flat, the disk is a bright, shiny chestnut with an entire margin.

The May BRYOLOGIST was issued May 5th, 1903.

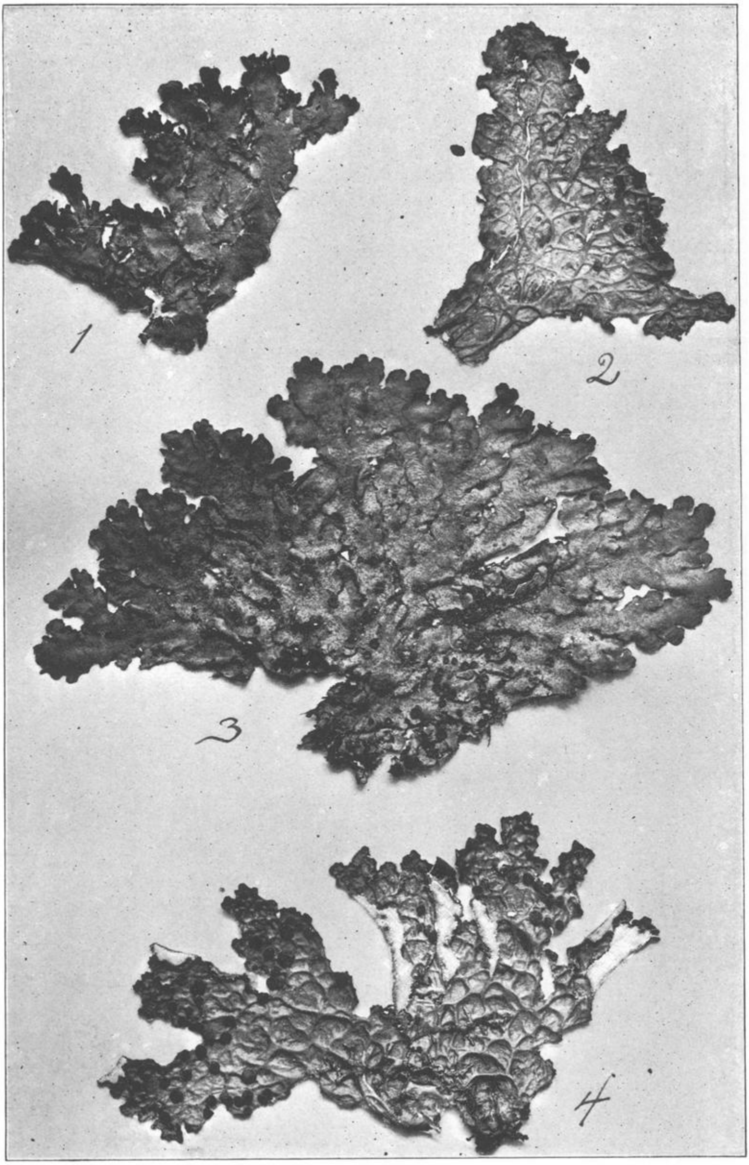

PLATE IX. Fig. 1. *Sticta quercizans*. Fig. 2. *S. Oregona*.
Fig 3. *S. amplissima* Fig. 4. *S. anthraspis*.

S. amplissima is found on rocks in its best form, but grows on old wood and even trunks of living trees. It is one of the most common of the Stictas, and when growing on rocks, where it forms a large, round mat of light gray, thickly covered with the reddish apothecia, is a very handsome plant.

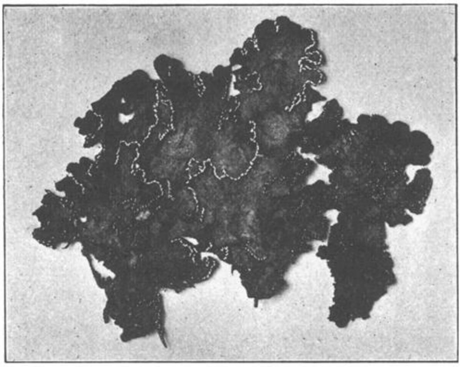

Fig. 5. *Sticta aurata.* Red. ⅓.

STICTA AURATA (Sm.) Ach. Fig. 5. The thallus of this interesting species has broad, deep lobes with crenate margins covered with golden colored soredia, is greenish brown soon turning a brownish red and finally a deep rose. The inner part of the thallus is a beautiful orange color, and as the deep, broad lobes turn over, with their bright yellow powdery margins, the effect is unusual. There is only one other species with which *S. aurata* can be confounded, *S. crocata*, but in this the soredia are a bright lemon, the thallus is more brown than red. The under surface of the thallus of *S. aurata* is light brown with a reddish bloom, becoming darker toward the centre, with small cyphellæ which appear as minute yellow spots. The apothecia are large, near the margin, and are dark red; they are only found on tropical specimens. This is a southern lichen, is found growing with mosses on rocks and trees.

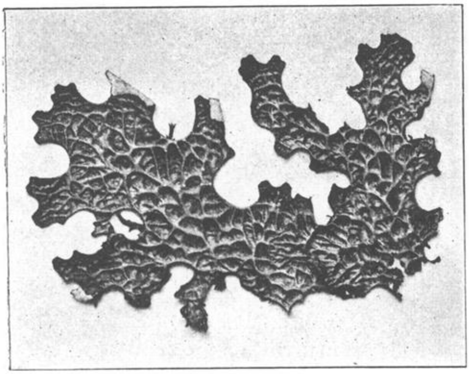

Fig. 6. *Sticta pulmonaria.* Red. ⅓.

STICTA PULMONARIA (L.) Ach. Fig. 6. Thallus large, very thin and brittle, covered with depressions, the lobes are long, angular, narrow, and truncate at the ends, frequently the margins are thickly dotted with silvery soredia. The lower side is a light brown, villous, and loosely attached to the substratum. There are no cyphellæ, but light spots appear which seem to be caused by the depressions above.

The apothecia, which are not so common as soredia, are medium in size, usually near the margin, the disk is reddish brown or chestnut, has an entire margin and is flat or slightly convex. *S. pulmonaria* is a common species in North America, it grows on living and dead trees, and on rocks.

STICTA OREGONA Tuck. Plate IX. Fig. 2. Thallus similar to *S. pulmonaria*, is not so brittle, but soft and crumbles easily. It has long lobes, rounded at the ends, with erose, finely dissected edges which give it a ragged appearance; in color is a light greenish brown. The under surface is also light brown and covered with a fine nap, through which appear light colored, bare looking spots as in *S. amplissima*. The apothecia are medium, scattered over the surface, but more numerous near the margin, the disk is a dark chestnut with a light colored margin, This species is found in Oregon, as its specific name indicates, also in California and British Columbia, growing on trees.

STICTA QUERCIZANS (Michx.) Ach. Plate IX. Fig. 1. Thallus thin, somewhat coriaceous, smooth, from greenish to reddish brown, darker at the margin. The lobes are deeply cut, pinnatifid, with rounded ends which are usually crisped, finely toothed, with tiny, coral-like points.

In many specimens at the margin the thallus breaks and shows a line of the white inner layer. The under surface is a paler brown with a thick, spongy nap, dotted with numerous round, white cyphellæ which look like minute holes in the thick nap.

Apothecia are very rare except in tropical specimens, they are small, marginal, with a red brown disk and thin toothed margin, lighter in color than the disk. Found on trees and rocks with moss, common in the southern states, especially in the mountains of North Carolina.

STICTA CROCATA (L.) Ach. In appearance this species resembles *S. aurata*, but the thallus is russet brown, not reddish brown, the soredia are lemon colored, not golden, the lobes are longer and narrower, with crenate margins, the surface is pitted and wrinkled. The powdery lemon colored soredia are found on the thallus as well as the margin. On the under side it is a light brown, turning darker until almost black.

Apothecia are rare except in tropical specimens where they are small and not abundant, the disk is a dark chestnut, with a paler, entire margin. This handsome lichen is found on rocks, growing with moss, occasionally is found on trees.

STICTA ANTHRASPIS Ach. Plate IX. Fig. 4. Thallus thin and brittle, reticulated with deep depressions, the lobes are wide with irregular crenate edges, these are frequently covered with light gray soredia. In color it is a light olive brown, becoming darker until it is a russet brown. The underside is covered with a light brown nap which is thicker and darker at the centre. The cyphellæ are very minute and white, not depressed but seeming to be on the surface of the thick nap. The apothecia are very numerous in specimens where soredia are not present; they are medium, the disk convex and reddish brown.

This species is found on rocks with mosses, and on trees, in California, Oregon, and farther north, as well as in the tropics.

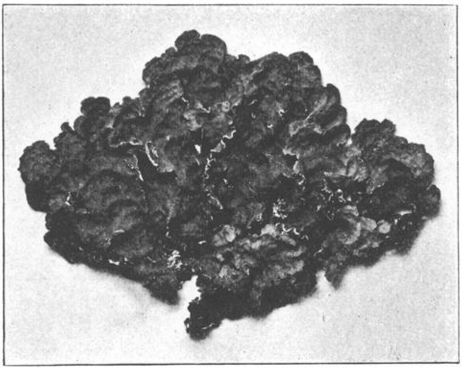

Fig. 7. *Sticta scrobiculata.* Red, ½.

STICTA SCROBICULATA (Scop.) Ach. Fig. 7. The thallus is large, almost round, is irregularly pitted, in color is a light green and at the margin is usually darker, with a reddish tinge. The rounded, wavy lobes are frequently covered with light gray soredia. The under surface is a light brown with a close nap through which appear pale spots, smaller and rounder than those in *S. amplissima* and *S. pulmonaria.* Apothecia are very rare, they are small and scattered, the disk is a dark brown with an entire margin.

S. scrobiculata is found in the northern states, on rocks, occasionally on trees where it does not reach its highest development. While not a very common species it is not rare, and is one of the most interesting species of this handsome genus.

WEST INDIAN MOSSES IN FLORIDA.

ELIZABETH G. BRITTON.

On our way home from Cuba, we stopped off for a day at Miami, and drove to Peacock Inn, at Cocoanut Grove. After leaving the Tropical Laboratory of the Agricultural Experiment Station, the road passes through a "Hammock" or grove of hard wood trees, with a tangled growth of shrubs and vines giving shade and moisture and some wood loam. Elsewhere, the pine woods are dry and arid, and the coral rock so devoid of soil that it is a wonder anything will grow there; they have to dig holes with picks, instead of shovels, to plant their orange trees.

One of the commonest mosses found was *Octoblepharum albidum*, growing on the trunks of palmettos in the axils of the leaves, with *Vittaria lineata.* It is found in the same places in Cuba, associated with two species of Polypody. In the hammocks, however, mosses and hepatics found a congenial home and five species were collected which I had not before seen growing. One of these is not described in the Manual, so I give a description:

Microthamnium thelistegium (CM.) Mitt. J. L. Soc. **12**:504. 1869.
Hypnum thelistegium, CM. Syn. Musc. **2**:269. 1851.

Plants pale green or yellow; stems irregularly or pinnately branched, the branches short, 2–5 mm, long, spreading; leaves small, ovate-acuminate, concave, clasping and slightly decurrent at base, vein short, double or